macula

1. <dermatology> A stain, spot or thickening.

2. <ophthalmology> Often used alone to refer to the macula retinae.

(10 Jan 1998)

Previous: macrozoospore, macrura, macrural, macruran, macruroid, macrurous, mactra
Next: macula adherens, macula albida, macula atrophica, macula cerulea

ness hole through the
macula surrounded by annular **retinal** detachment. It is believed that macular holes begin with central or foveolar detachment, which then eventually develops into a full-depth macular hole. Gass et al. (1988), Arch. Ophthalmol. 106: 629-639. While surgical procedures, such as trans-para plana vitrectomy may interrupt the progress of **macular degeneration** to a full blown **macular** hole, this operation can permanently damage central **vision**, and typically only improves **vision** 40% of the time.

to reattach the **retina** and a small area of destruction is not noticeable, macular holes require gentle induction of chorioretinal adhesion to avoid the destruction of adjacent neurosensory tissue and pennanent destruction of central **vision**.

. . .

rats are anesthetized with a ketamine-xylazine mixture which is administered intravitreally with I pi of the tested factor dissolved in phosphate buffered **saline** (PBS) at a concentration of 50-1000 ngIVI. The **injections** were made with the insertion of a 32 gauge needle through the **sclera**, **choroid** and **retina** approximately midway between the ora serrata and equator of the eye. The factor-injected animals are compared to either uninjected littennates of. . .

. . .

perfusion of mixed aldehydes. The eyes are embedded in epoxy resin and sectioned into I gm thick sections of the entire **retina** along the vertical meridian of the eye. The degree of light-induced **retinal degeneration** is then quantified by two methods. The first is through measurement of the outer nuclear layer (ONL) thickness, which is used. . . 9 sets of 3 measurements each (total of 27 measurements in each hemisphere). Each set is centered on adjacent 440-pm lengths of **retina** (the diameter of the microscope field at 400X magnification). The first set of measurements is taken at approximately 440 pm from the optic nerve head, with subsequent sets taken more peripherally. Within each 440-pm length of the **retina**, the 3 measurements are made at defined points separated from one another by 75 gm. In all, 54 measurements are taken in the two hemispheres which sample representative regions of almost the entire **retinal** section.

. . .

is through a subjective evaluation by an examining pathologist on a scale of 0-4+, wherein 4+ is maximal rescue and nearly normal **retinal** integrity. The degree of photoreceptor rescue in each section, based in comparison to the control eye in the same rat, is. . .

ition contained within said container; wherein the composition comprises an active agent effective for delaying or preventing **retinal** cell injury or death, the label on said container indicates that the composition is useful for delaying or preventing **retinal** cell injury or death, and said active agent is an active PROM, PRO220, PRO216, PRO243, PRO306, PRO346, PRO322, PRO536, PRO943, PROW,. . .

ACCESSION NUMBER: 2001009327 PCTFULL ED 20020828

TITLE (ENGLISH): METHOD OF PREVENTING THE INJURY OR DEATH OF **RETINAL** CELLS AND TREATING OCULAR DISEASES

TITLE (FRENCH): PROCEDE DE PREVENTION DE LA DETERIORATION OU DE LA MORT DES CELLULES DE LA RETINE ET DE TRAITEMENT DES TROUBLES OCULAIRES

INVENTOR(S): ASHKENAZI, Avi J.;
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GODOWSKI, Paul J.;
GURNEY, Austin L.;
KLJAVIN, Ivar J.;
LAFLEUR, Monique;
MARK, Melanie R.;
MARSTERS, Scot A.;
PITTI, Robert M.;
WATANABE, Colin K.;
WOOD, William I.
DOCUMENT TYPE: Patent
PATENT INFORMATION:

NUMBER	KIND	DATE
WO 2001009327	A2	20010208

DESIGNATED STATES
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU
CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK
MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
TR TT TZ UA UG US UZ VN YU ZA ZW GH GM KE LS MW MZ SD
SL SZ TZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY
DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG
CI CM GA GN GW ML MR NE SN TD TG
APPLICATION INFO.: WO 2000-US20710 A 20000728
PRIORITY INFO.: US 1999-60/146,222 19990728

L32 ANSWER 4 OF 9 USPATFULL on STN

AB . . . distal end of the cannula. The surgical device is particularly suitable for use in the treatment of treat Age Related **Macular Degeneration** (AMD).

SUMM . . . particularly, the present invention relates to a device and method for localized delivery of beta radiation to treat Age Related **Macular Degeneration** (AMD).

SUMM [0002] The slow, progressive loss of central **vision** is known as **macular degeneration**. **Macular degeneration** affects the **macula**, a small portion of the **retina**. The **retina** is a fine layer of light-sensing nerve cells that covers the inside back portion of the eye. The macula is the central, posterior part of the **retina** and contains the largest concentration of photoreceptors. The macula is typically 5 to 6 mm in diameter, and its central portion is known as the **fovea**. While all parts of the **retina** contribute to sight, only the macula provides the sharp, central **vision** that is required to see objects clearly and for daily activities including reading and driving

SUMM [0003] **Macular degeneration** is generally caused by age (Age Related **Macular Degeneration**, "AMD") or poor circulation in the eyes. Smokers and individuals with circulatory problems have an increased risk for developing the. . .

SUMM [0005] The two forms of **macular degeneration** are known as "wet" and "dry" **macular degeneration**.

SUMM [0006] Dry **macular degeneration** blurs the central **vision** slowly over time. Individuals with this form of **macular degeneration** may experience a dimming or distortion of **vision** that is particularly noticeable when trying to read. In dry **macular degeneration**, yellowish deposits called drusen develop beneath the **macula**. Drusen are accumulations of fatty deposits, and most individuals older than 50 years have at least one small druse. These fatty deposits are usually carried away by blood vessels that transport nutrients to the **retina**. However, this process is diminished in **macular degeneration** and the deposits build up. Dry **macular degeneration** may also result when the layer of light-sensitive cells in the macula becomes thinner as cells break down over time. Generally, a person with dry form **macular degeneration** in one eye eventually develops visual problems in both eyes. However, dry **macular degeneration** rarely causes total loss of reading **vision**.

SUMM [0007] Wet **macular degeneration** (the neovascular form of the disease) is more severe than dry **macular degeneration**. The loss of **vision** due to wet **macular degeneration** also comes much more quickly than dry **macular degeneration**. In this form of the disease, unwanted new blood vessels grow beneath the macula (Choroidal Neo-Vascularization (CNV) endothelial cells). These. . . vessels are fragile and leak fluid and blood, which causes separation of tissues and damages light sensitive cells in the **retina**. Individuals with this form of **macular degeneration** typically experience noticeable distortion of **vision** such as, for example, seeing straight lines as wavy, and seeing blank spots in their field of **vision**. Early diagnosis of this form of **macular degeneration** is vital. If the leakage and bleeding from the choroidal blood vessels is allowed to continue, much of the nerve. . . destroyed. While wet AMD comprises only about 20% of the total AMD cases, it is responsible for approximately 90% of **vision** loss attributable to AMD.

SUMM [0008] Currently, Photo-Dynamic Therapy (PDT) is used to treat individuals with wet **macular degeneration**. During PDT, a photo-sensitive drug is first delivered to the patient's system,

typically by injecting the drug into the patient's. . . functions, resulting in the closure of the choroidal blood vessels while leaving normal vessels still functional. While PDT cannot restore **vision** , it reduces the risk of **vision** loss by restricting the growth of abnormal choroidal blood vessels.

SUMM . . . population of patients in which it shows efficacy is small (less than 20%). Furthermore, PDT does not typically restore lost **vision**, but rather, only slows the progression of **vision** loss. In the attempt to design a selective disruption therapy, it appears that PDT, although groundbreaking, is not aggressive enough. . .

SUMM . . . Radiation is a promising medical technology that may be effective for the treatment of choroidal neovascularization due to age related **macular degeneration**. There are basically three types of nuclear radiation: Alpha, Beta, and Gamma.

SUMM . . . use thereof. Devices and methods of the invention are particularly useful for treatment of eye disorders such as Age Related **Macular Degeneration**.

SUMM . . . methods of use thereof. The device is particularly suitable for the localized delivery of beta radiation for the treatment of **macular degeneration**. The device delivers beta radiation to the affected sub-**macular** region afflicted with the condition.

SUMM [0019] In particular, we believe that the exposure of the new blood vessels formed during wet type **macular degeneration** to the beta radiation provides sufficient disruption of the cellular structures of the new blood cell lesions to reverse, prevent, or minimize the progression of the **macular degeneration** disease process. Such therapy in accordance with the invention can potentially restore visual acuity, extend retention of visual acuity, or. . .

SUMM [0023] The duration of radiation emission required during a single treatment for Age Related **Macular Degeneration** using the device can be quite short, e.g. less than 10 or 15 minutes, or even less than 5 minutes.. . . materials that have a half-life of at least about 2 years. Further, when used for the treatment of Age Related **Macular Degeneration**, it is preferable that the beta emitting material is selected from materials having an energy ranging from about 50 cGr/sec. . .

DETD [0030] A radiotherapy emitting material 8 is **located** at the distal end 6 of a cannula 2. The radiotherapy emitting material 8 preferably emits pure beta radiation because. . .

DETD . . . beta-emitting material may vary depending on the use of the device. For example, when used to treat Age Related **Macular Degeneration** (AMD), one treatment using the device will typically require radiation emission for a period of time ranging from about two. . .

DETD . . . beta emitting material may vary depending on the use of the device. For example, when used to treat Age Related **Macular Degeneration** (AMD), the beta emitting material is preferably selected from materials having an energy ranging from about 50 cGr/sec to about. . .

DETD [0036] In use, the **surgical** device 1 is gripped by the handle 14 or a portion of the proximal end 4 of the cannula 2, and the distal end 6 of the cannula 2 with the radiotherapy emitting material 8 is introduced into the **surgical** site. In contrast to prior methods in which access to the macula is provided by inserting devices between the eyelid. . . standard vitrectomy port incision (typically about a 20 gage--approximately 0.89 mm--incision) in the eye to provide access to the macula, **located** at the back of the eye. The distal end 6 of the cannula 2 and the radiotherapy emitting material 8. . . are then inserted through the incision towards the macula. This approach will provide the surgeon with a superior ability to **locate** the radiotherapy emitting material directly in the

affected area. This superior positioning approach provides for more effective therapy and enhanced safety for the lens and optic disc. The surgeon will then perform a vitrectomy and pre-detach the macula by **injecting saline** beneath the **retina** with a 41 gage needle to gain "direct access" to the sub **macular** membrane.

DETD . . . making a second 20 gage incision to provide access for a fiber optic illuminator, which is a standard practice in **retinal** surgery.

CLM What is claimed is:

3. The device of claim 2 wherein the beat emitting material is **located** on a distal portion of the cannula.

23. A method for treating a patient suffering from Age Related **Macular Degeneration** comprising treating an eye of a patient with beta radiation.

27. A method for treating a patient suffering from Age Related **Macular Degeneration** comprising treating the eye of the patient with a surgical device of any one of claims 1 through 17.

35. The method of claim 34 wherein the macula is pre-detached by injecting saline beneath the **retina**.

ACCESSION NUMBER:	2002:214509 USPATFULL
TITLE:	Beta radiotherapy emitting surgical device and methods of use thereof
INVENTOR(S):	Dejuan, Eugene, JR., LaCanada, CA, UNITED STATES Hallen, Paul, Ft. Worth, TX, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002115902	A1	20020822
	US 6875165	B2	20050405
APPLICATION INFO.:	US 2001-790486	A1	20010222 (9)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	Dike, Bronstein, Roberts & Cushman, Intellectual Property Practice Group of, Edwards & Angell, LLP, 130 Water Street, Boston, MA, 02109
NUMBER OF CLAIMS:	42
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	2 Drawing Page(s)
LINE COUNT:	564

ng regression of diseases and unwanted conditions of the posterior segment, including but not limited to choroidal neovascularization; **macular degeneration**; age-related **macular degeneration**, including wet AMD; **retinal** angiogenesis; chronic uveitis; and other retinoproliferative conditions.

DETD . . . assigned to University of Louisville Research Foundation; U.S. Pat. No. 6,376,517, issued Apr. 23, 2003, titled Pipecolic acid derivatives for **vision** and memory disorders, assigned to GPI NIL Holdings, Inc; PCT publication WO 2004/028477, published Apr. 8, 2004, titled Method subretinal administration of therapeutics including steroids: method for localizing pharmadynamic action at the choroid and **retinat**; and related mathods for treatment and or prevention of **retinal** diseases, assigned to Innorx, Inc; U.S. Pat. No. 6,416,777, issued Jul. 9, 2002, titled Opthalmic drug delivery device, assigned to. . .

DETD . . . modulator; metalloprotease 13 inhibitor; acetylcholinesterase inhibitor; potassium channel blockers; endorepellin; purine analog of 6-thioguanine; cyclic peroxide ANO-2

ating **macular degeneration**,
comprising: inserting an ionizing radiation source into the eye;
positioning the ionizing radiation source about 1 mm to about 3. . .

ACCESSION NUMBER:	2006:168116 USPATFULL
TITLE:	Intraocular radiotherapy treatment for **macular degeneration**
INVENTOR(S):	DeJuan, Eugene JR., LaCanada, CA, UNITED STATES Hallen, Paul, Ft. Worth, TX, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2006142629	A1	20060629
APPLICATION INFO.:	US 2005-282408	A1	20051118 (11)

RELATED APPLN. INFO.:	Continuation of Ser. No. US 2005-75098, filed on 8 Mar 2005, PENDING Continuation of Ser. No. US 2001-790486, filed on 22 Feb 2001, GRANTED, Pat. No. US 6875165
DOCUMENT TYPE:	Utility
FILE SEGMENT:	APPLICATION
LEGAL REPRESENTATIVE:	COOK, ALEX, MCFARRON, MANZO, CUMMINGS & MEHLER LTD, SUITE 2850, 200 WEST ADAMS STREET, CHICAGO, IL, 60606, US
NUMBER OF CLAIMS:	21
EXEMPLARY CLAIM:	1-42
NUMBER OF DRAWINGS:	2 Drawing Page(s)
LINE COUNT:	514

ath the **retina** with a 41 gage needle to gain "direct access" to the sub **macular** membrane.

DETD . . . making a second 20 gage incision to provide access for a fiber optic illuminator, which is a standard practice in **retinal** surgery.

CLM What is claimed is:

52. The device of claim 51 wherein the selected localized area comprises sub-**retinal** tissue.

53. The device of claim 52 wherein the sub-**retinal** tissue comprises blood vessels.

59. An ophthalmic surgical device for treating **macular degeneration**, comprising: a handle; a cannula including a proximal end and a distal end; a radiotherapy emitting material **located** in proximity to the distal end of the cannula; and a shield at least partially shielding the radiotherapy emitting material.

. .

63. The device of claim 59 wherein the selected area comprises sub-**retinal** tissue.

64. The device of claim 63 wherein the sub-**retinal** tissue comprises blood vessels.

ACCESSION NUMBER:	2005:203593 USPATFULL		
TITLE:	Ophthalmic treatment apparatus		
INVENTOR(S):	DeJuan, Eugene JR., La Cananda, CA, UNITED STATES Hallen, Paul, Ft. Worth, TX, UNITED STATES		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2005177019	A1	20050811
APPLICATION INFO.:	US 2005-75098	A1	20050308 (11)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 2001-790486, filed on 22 Feb 2001, GRANTED, Pat. No. US 6875165		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	COOK, ALEX, MCFARRON, MANZO, CUMMINGS & MEHLER LTD, SUITE 2850, 200 WEST ADAMS STREET, CHICAGO, IL, 60606, US		
NUMBER OF CLAIMS:	28		
EXEMPLARY CLAIM:	1-42		
NUMBER OF DRAWINGS:	2 Drawing Page(s)		
LINE COUNT:	509		

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What is Macular Degeneration?

RETINAL REPOSITIONING OPERATIONS

Assistive Technologies

General Interest

Nutritional Supplements

Macular Degeneration in the Young

Photodynamic Therapy

PKC-412

Proton-Beam Therapy

Rheotherapy/ Rheopheresis

Tensmac

Archives

Operations which involve repositioning the macula away from leaking blood vessels.

Macular Degeneration

- Posted by Adrienne A Hicks on August 20, 1998 at 13:48:33:

Anyone with information on new procedure on moving the Retina away from the degenerative area please post to the bulletin board. Thanks.

- Posted by Dan on August 23, 1998 at 11:52:28: In Reply to: Macular Degeneration posted by Adrienne A Hicks on August 20, 1998 at 13:48:33:

Dear Adrienne,
This is a procedure which has had some success. It is called retinal translocation, but--of course--it is only successful if there is enough undamaged cell area, and it only lasts as long as that cell area remains healthy. If I remember correctly, the operation has been done at Johns Hopkins and at Washington

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University in St. Louis, among other locations. Sorry I don't know more, but perhaps this will get you started in the right direction.

- Posted by chris on August 26, 1998 at 20:42:38: In Reply to: Macular Degeneration posted by Adrienne A Hicks on August 20, 1998 at 13:48:33:

I have also heard of the procedure at John Hopkins University where they actually detach your retina and move it so your vision focuses on a "clean" part of the retina. Dr. Matt Thomas at the Barnes Jewish Hospital in St Louis told me about this procedure. I went to him in May to help save my vision because of macular degeneration at 28. I ended up losing my center of vision in one eye but thankfully I still have my peripheral vision and 20/20 in the other eye with contacts. I look forward to the postings your inquiry will generate. I will also inquire with my local retinal doctor and Dr. Thomas the next time I travel to St. Louis.

Good Luck,
CB

Procedure Called Macular Translocation

- Posted by John B. Clementi on October 08, 1998 at 15:37:26:

Anyone:
A recent article on AMD in the Oct 98 issue of "Bottom Line" refers to a Dr. Eugene de Juan @ Johns Hopkins Hospital who has developed a procedure called Macular Translocation to restore sight to people who

have the wet form of MD. Is there anyone who has heard or has information on this procedure? I can't find the Prof. name on the internet.

- Posted by Dan Roberts on October 09, 1998 at 16:22:28: In Reply to: Proced. Called Macular Translocation posted by John B. Clementi on October 08, 1998 at 15:37:26:

John,
Macular translocation is a surgical treatment wherein the entire retina is rotated, moving the foveal region away from the diseased underlying choroid and RPE cells. The choroidal neovascular membranes (CNVMs) can then be photocoagulated to prevent progression to the new foveal location, thus restoring central vision.

This procedure has been performed only in a few pilot studies, and it involves very significant and severe risks until greater refinement has been developed.

Other experimental therapy treatments include PHOTODYNAMIC, PHARMACOLOGIC, RADIATION, and other SURGICAL techniques such as sub-macular surgery. You will want to look into all of them, and perhaps volunteer as a participant--realizing, of course--that they are all still in the experimental stages, and that no promises are being made at this time.

The MD Support web site can get you started on learning more about therapies for MD.

- Posted by Judi on February 03, 1999 at 20:00:12:

The report was on Dr. Eugene DeJuan, a well-

respected researcher at the Wilmer Eye Institute at Johns Hopkins University in Baltimore. His research is in two areas. One is retinal translocation, where the retina is detached and shifted to move the damaged cells away from the macular region. The other is an "artificial retina" (not really the best term for it) - an implant that gathers light and sends the information to the brain, much like your retinal cells do. For more information, you can look at www.pslgroup.com/dg/7dea6.htm for a news release about translocation. For the artificial retina project, go to www.ede.ncsu.edu/erl/erl_eye.htm. Both of these are extremely experimental.

Macular Degeneration-New surgery?

• Posted by Kenneth White on December 05, 1998 at 14:24:21:

My wife heard a Dr. Dean Edell program in which he said a new surgery may help restore vision to an eye which has lost its central vision. Basically the Dr moves the retina to one side to provide a better place for the central vision to focus. Has anyone heard this and if so what web site address can I use to get the info from Dr. Dean Edell. He said he was on the web.

• Posted by Terri Foxman on December 07, 1998 at 15:22:08: In Reply to: Macular Degeneration-New surgery? posted by Kenneth White on December 05, 1998 at 14:24:21:

New Surgical Technique Helps Blind Man See Again
3.51 p.m. ET (2052 GMT) December 4, 1998

American Macular Degeneration Foundation

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Webmaster

LONDON - A new surgical technique has been used to restore the sight of a man suffering from the commonest cause of blindess in the elderly.

David Wong, an eye surgeon at the Royal Liverpool University Hospital in northwest England, said the surgery which repositions the damaged part of the retina could help thousands of people.

"Put simply, it is like moving a carpet which has a worn patch in it and tucking the worn part away," Wong explained in a statement.

"What we have demonstrated is that there is spare capacity for vision in the eye. When one part is worn out, another part can be made to take over the work," he added.

Millions of people around the world suffer from macular degeneration in which new blood vessels grow near the macula of the eye causing a gradual loss of vision and eventual blindness.

Up until now, laser therapy has been the most effective treatment for the condition. It limits the damage but it cannot improve sight.

During the two-hour operation, Wong and his colleagues transferred vision from the worn part of the retina of 70-year-old John Barr to a healthier area so he could see again.

Barr, of Pickering in northern England, couldn't read before the operation. Three days after the surgery, he was reading small print and is hoping to be able to drive again soon.

Wong described the technique as "the single most important surgical development for many years."

Although the surgery is still at the developmental stage and doctors in the United States and Germany are also trying to perfect the technique, Wong said he is encouraged by his results so far.

"This is a once in a lifetime experience for a surgeon where you take little steps and then suddenly make a giant leap. It is the sort of thing every surgeon dreams of because it may transform the lives of so many people. Macular degeneration affects so many people and is so devastating," said Wong.

Early signs of the disorder are a sudden loss of vision, distortions of straight lines or a dark patch in one eye.

Doctors have advised elderly people to eat more corn, eggs, orange peppers, red grapes and pumpkins which are rich in lutein and zeaxanthin, chemical compounds called antioxidant carotenoids, that can help prevent macular degeneration.

Earlier this year, U.S. researchers said they were close to finding a gene that could be responsible for the condition.

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[Visudyne photodynamic therapy]

High Dose Antioxidant Vitamins and Mineral reduce risk of vision loss

[Fundus Photo and Fluorescein Angiogram Gallery]

Limited Retinal Translocation Surgery for age-related macular degeneration

- **Overview of the surgery:** Limited Retinal Translocation Surgery is a relatively new surgical procedure originally developed by Dr. Eugene de Juan. It offers a new approach to managing patients with subfoveal choroidal neovascular membranes. This technique offers the possibility of regaining some central vision in a disease that can otherwise be quite devastating to central vision. The data presented here is from Dr. de Juan's experience

- **Objective of the surgery:** The goal of this surgical approach is to surgically move or translocate the fovea so that the choroidal neovascular membrane is no longer located beneath the center of the fovea. The Choroidal neovascular membrane can then be treated with laser photocoagulaton, while sparing the foveal center.

- **The surgical procedure:** The surgery involves performing a complete

vitrectomy, detaching the temporal retina and macula with BSS, mobilizing the retina, performing scleral imbrication with external sutures to shorten the sclera, and completing the surgery with air-fluid exchange to reattach the retina and help move the fovea inferiorly.

- **Postoperative positioning:** For approximately the first 15 minutes after the surgery, the patient is positioned on one side or the other, to place the air bubble against the nasal retina of the operated eye. Then the patient is positioned upright for approximately 2 days.

- **Movement of the retina:** Movement of the retina has ranged from 0-2000 microns. In 76% of patients, the translocation was over 500 microns, and in 48% of patients it was over 1000 microns.

- **Postoperative laser photocoagulation**: The choroidal neovascular membrane is treated with laser photocoagulation in the office approximately 3-5 days after the surgery.

- **Visual acuity results:** In patients that had over 6 months of follow up, most patients experienced an increase in one line of visual acuity from their preoperative acuity. Over 30% of patients have experienced 2 or more lines of improvement and almost 10% had 6 or more lines of improvement. Approximately 35-40% of patients had 20/400 or worse visual acuity. Almost 30% of patients have had a best corrected visual acuity of 20/80 or better in the operated eye. Compare this with the subfoveal Macular Photocoagulation Study trial in which only 2.2% of patients with laser treatment and 7% of patients without treatment had a visual acuity of 20/80 or better at 6 months.

- **complications of surgery** (from Dr. de Juan's experience): The major

complications have included: retinal detachment (8%), macular fold (3%), macular hole (9%), hemorrhage (8%), scleral perforation (2%).

- **Recurrent choroidal neovascularization**: Recurrent choroidal neovascularization occurred in approximately 10% of patients. As these patients are followed for longer periods of time, we might expect the rate of recurrence to increase. In the Macular Photocoagulation Study, recurrent choroidal neovascularization occurred in over 50% of patients.

- **patient selection:**
  - Patients that might be considered for this surgery should have a subfoveal choroidal neovascular membrane (CNVM).
  - CNVM should not extend inferior to the center of the fovea by greater than 800 - 1000 microns.
  - Previous laser is not a contraindication for this surgery.
  - The RPE inferior to the CNVM should be reasonably healthy.
  - Classic and occult CNVM can be acceptable.
  - Visual acuity approximately 20/100 or worse.

Both Dr. Gilbert and Dr. Bhavsar have special training and experience in performing this Limited Retinal Translocaton surgery.

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[Low Vision Resources] [Our Clinical Research]

[Visudyne photodynamic therapy]

National Library of Medicine - Medical Subject Headings

2006 MeSH

MeSH Descriptor Data

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MeSH Heading	Macular Degeneration
Tree Number	C11.768.585.439
Annotation	macular refers to macula lutea of retina; includes "macular dystrophy"
Scope Note	Degenerative changes in the macula lutea of the retina.
Entry Term	Maculopathy, Age-Related
Entry Term	Age-Related Maculopathies
Entry Term	Age-Related Maculopathy
Entry Term	Maculopathies, Age-Related
Allowable Qualifiers	BL CF CI CL CN CO DH DI DT EC EH EM EN EP ET GE HI IM ME MI MO NU PA PC PP PS PX RA RH RI RT SU TH UR US VE VI
Previous Indexing	Retinal Degeneration (1970-1978)
Online Note	search RETINAL DEGENERATION 1970-74
History Note	79(75); was see under RETINAL DEGENERATION 1970-78
Unique ID	D008268

MeSH Tree Structures

Eye Diseases [C11]
- Retinal Diseases [C11.768]
  - Retinal Degeneration [C11.768.585]
    - ➤ Macular Degeneration [C11.768.585.439]
      - Macular Edema, Cystoid [C11.768.585.439.245]
    - Retinal Drusen [C11.768.585.585]
    - Retinitis Pigmentosa [C11.768.585.731] +
    - Retinoschisis [C11.768.585.865]

National Library of Medicine - Medical Subject Headings

2006 MeSH

MeSH Descriptor Data

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MeSH Heading	Macula Lutea
Tree Number	A09.371.729.522
Annotation	a depression on the retina; macular dis: coord IM with RETINAL DISEASES (IM)
Scope Note	An oval area in the retina, 3 to 5 mm in diameter, usually located temporal to the posterior pole of the eye and slightly below the level of the optic disk. It is characterized by the presence of a yellow pigment diffusely permeating the inner layers, contains the fovea centralis in its center, and provides the best phototropic visual acuity. It is devoid of retinal blood vessels, except in its periphery, and receives nourishment from the choriocapillaris of the choroid. (From Cline et al., Dictionary of Visual Science, 4th ed)
Allowable Qualifiers	AB AH BS CH CY DE EM EN GD IM IN IR ME MI PA PH PP PS RA RE RI SE SU TR UL US VI
Unique ID	D008266

MeSH Tree Structures

Sense Organs [A09]
- Eye [A09.371]
  - Retina [A09.371.729]
    - Amacrine Cells [A09.371.729.050]
    - Blood-Retinal Barrier [A09.371.729.055]
    - Fundus Oculi [A09.371.729.313]
    - ➤ Macula Lutea [A09.371.729.522]
      - Fovea Centralis [A09.371.729.522.436]
    - Optic Disk [A09.371.729.690]

National Library of Medicine - Medical Subject Headings

2006 MeSH

MeSH Descriptor Data

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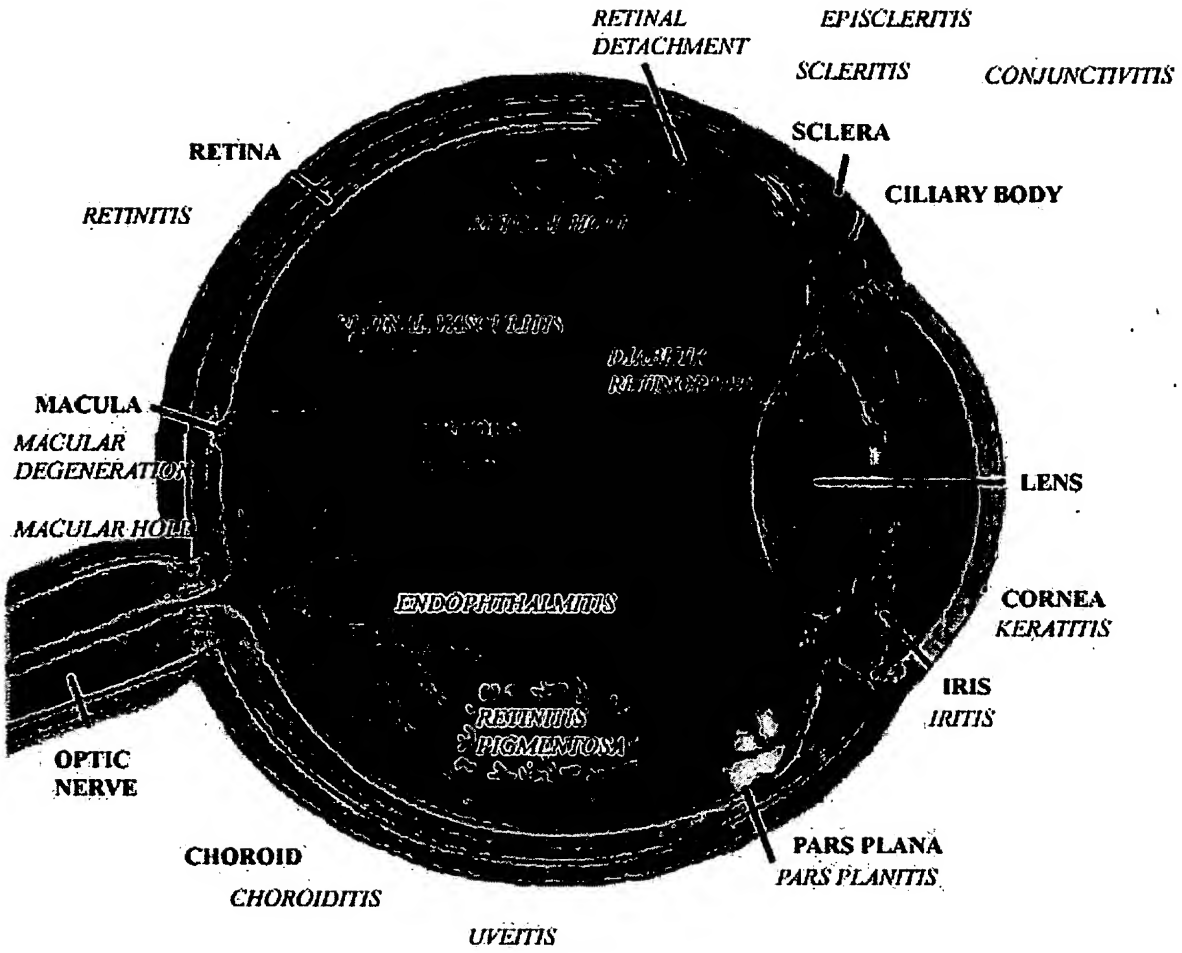
MeSH Heading	Acoustic Maculae
Tree Number	A09.246.631.909.625.125
Scope Note	Thickened areas of the saccule and utricle where the termination of the vestibular nerve occurs.
Entry Term	Maculae, Acoustic
Entry Term	Macula, Acoustic
Allowable Qualifiers	AB AH BS CH CY DE EM EN GD IM IN IR ME MI PA PH PP PS RA RE RI SE SU TR UL US VI
Previous Indexing	Labyrinth (1966-1978)
Online Note	use ACOUSTIC MACULAE to search MACULAE, ACOUSTIC 1979-94
History Note	95; was MACULAE, ACOUSTIC 1979-94 (see under SACCULE AND UTRICLE 1983-90, see under LABYRINTH 1979-82)
Unique ID	D008267

MeSH Tree Structures

Sense Organs [A09]
Ear [A09.246]
Ear, Inner [A09.246.631]
Vestibule [A09.246.631.909]
Saccule and Utricle [A09.246.631.909.625]
▶ Acoustic Maculae [A09.246.631.909.625.125]
Hair Cells, Vestibular [A09.246.631.909.625.125.340]
Otolithic Membrane


RETINAL DETACHMENT
EPISCLERITIS
SCLERITIS
CONJUNCTIVITIS
SCLERA
RETINA
CILIARY BODY
RETINITIS
MACULA
MACULAR DEGENERATION
LENS
MACULAR HOLE
ENDOPHTHALMITIS
CORNEA
KERATITIS
IRIS
IRITIS
RETINITIS PIGMENTOSA
OPTIC NERVE
PARS PLANA
PARS PLANITIS
CHOROID
CHOROIDITIS
UVEITIS